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OCTOBER 13.

The President, Dr. RUSCHENBERGER, in the chair.

Sixteen members present.

The Seibert Collection of Minerals, which was completed in 1820, was received on deposit, and ordered to be preserved intact under that name as historic evidence of scientific progress.

Variations in Solanum Fendleri, A. G.—Mr. THOMAS MEEHAN said that among other agricultural and horticultural plants the history of the potato was not clearly known. It was said to be a native of Mexico, Chili, and Peru, but he doubted whether it had been found anywhere beyond all question indigenous. *Solanum Fendleri*, A. Gray, had much in common with *S. tuberosum*. The flowers and foliage differed chiefly in being much smaller in all their parts. He had plants under culture for eight years, but could not find any variation in the shape and size of the tubers until this year, when they have begun to vary in the direction of the common potato. Hitherto, the tubers have been round, about the size of a large bullet, and rugose from the imperfect tuber cells on the surface. This season the roots have varied in the direction of the common potato. They are oval and compressed, and one has reached a dimension of one inch wide and two inches long, and with the skin clear and semi-translucent as we see in more delicate potatoes. He thinks, however, that these facts do no more than suggest a possibility of the unity of origin of the *Solanum Fendleri* and *Solanum tuberosum*. The fact, that the former tubers will endure a temperature of zero in the ground, while the latter was so easily destroyed by frost, might, indeed, be considered against such possibility unless we could conceive of some physical change coexistent with a change of form.

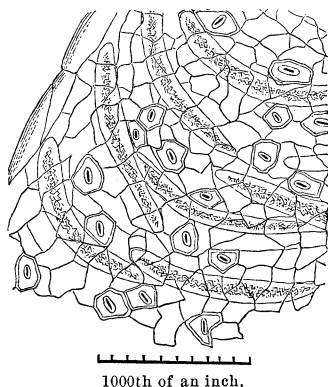
Crystallization in Plants.—Dr. J. Gibbons Hunt remarked that the subject of crystallization in plants, though not new to botanists, is interesting because of the extreme beauty of these deposits, and, also, an account of the obscurity of their origin and true significance in the life-history of the plants. The entomologist, perhaps, has need for alarm, because some botanists assert that some plants devour the special objects of his study; but, I think, the mineralogist might feel equally jealous to learn that the all-devouring plants were busy picking up his crystals from the inorganic kingdom, and using them, at least, to beautify their own tissues.

I would ask attention, at this time, to only one form of plant-

crystal—the cystolith—so called because the aggregation of crystals is inclosed in a capsule or cyst within a special cell, and is, moreover, connected with its cell by means of a delicate filament, differing in *this* particular from *all other* cell-contents.

In our common nettle (*Urtica*) we meet with the ordinary form of cystolith. A simple aggregation of minute crystals—probably oxalate of lime—nearly circular in form, showing the capsule plainly which envelops them, and also the special cell containing the cystolith. About six hundred fill a line an inch long, and four hundred are found in one square inch. Each cystolith contains about one hundred individual crystals. At lowest estimate, therefore, forty thousand crystals exist in one square inch of nettle leaf.

In *Pilea muscosa*—a near ally of *Urtica*—I find a type of cystolith differing widely from all forms heretofore described. They are elongated and bent, in form, like an Australian boomerang. They lie in cells measuring only the $\frac{1}{70}$ of an inch long, and the $\frac{1}{650}$ wide; and so abundant that quite one-third of the entire leaf is occupied with them. Cystoliths of this magnitude and singular form I believe to be unknown to botanists. The filament connecting each one with its cell-wall is apparent.



What is the significance of these plant-crystals?—and there are others more numerous and more beautiful—what their office in the life of the plant? what part do they act in supplying the salts of lime, potash, and soda to the tissues of animals? Will scientific agriculture answer?

The death of Thomas Sparks was announced.

OCTOBER 20.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-four members present.

Abies concolor in Colorado.—Mr. THOMAS MEEHAN announced the discovery of *Abies* (*Picea* of Loudon) *concolor* in Glen Eyrie, near Pike's Peak, in Colorado, by Dr. Engelmann. When, however, he explored what was till then an unknown cañon in 1871, and which by right of a first discovery he had named Cañon